

Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A transgenic plant expressing a dermaseptin cationic peptide ~~selected from the group consisting of:~~

- ~~_____ (a) temporins; and~~
- ~~_____ (b) dermaseptins.~~

2. (currently amended) A transgenic plant comprising a recombinant nucleic acid molecule, wherein the nucleic acid molecule encodes a dermaseptin peptide ~~selected from the group consisting of:~~

- ~~_____ (a) temporins; and~~
- ~~_____ (b) dermaseptins.~~

3. (currently amended) A transgenic plant according to claim 2 wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 3 ~~selected from the group consisting of the amino acid sequences set forth in SEQ IDs: 3-14, and 17-26.~~

4. (original) A transgenic plant according to claim 3 wherein the peptide further comprises an N terminal peptide extension of between 2 and 25 amino acids in length.

5. (currently amended) A transgenic plant according to claim 4 wherein the N terminal peptide extension is selected from the group consisting of AMWK (SEQ ID: 39), ASRH (SEQ ID: 40), and ALWK (SEQ ID: 41).

6. (currently amended) A transgenic plant comprising a recombinant nucleic acid molecule, wherein the nucleic acid molecule encodes a fusion peptide having a formula ~~selected from the group consisting of:~~

- ~~_____ (a) P-D ; and~~
- ~~(b) P-T,~~

wherein D is a dermaseptin peptide, ~~T is a temporin peptide~~ and P is an anionic pro-region peptide.

7. (currently amended) A transgenic plant comprising a recombinant nucleic acid molecule, wherein the nucleic acid molecule encodes a fusion peptide having a formula ~~selected from the group consisting of:~~

~~——(a) P-S-D; and~~

~~(b) P-S-T,~~

wherein D is a dermaseptin peptide, ~~T is a temporin peptide~~, P is an anionic pro-region peptide and S is a spacer peptide.

8. (currently amended) A transgenic plant comprising a nucleic acid molecule encoding a peptide comprising an amino acid sequence selected from the group consisting of:

(a) ~~SEQ IDs: 3-14~~ SEQ ID NO: 3 and fragments thereof;

(b) amino acid sequences that differ from an amino acid sequence specified in (a) by one or more conservative amino acid substitutions; and

(c) amino acid sequences that share at least 40% sequence identity with an amino acid sequence specified in (a),

wherein the peptide has dermaseptin biological activity.

9. (original) A transgenic plant according to claim 8 wherein the peptide further comprises an anionic pro-region peptide operably linked to the N-terminus of the peptide.

10. (withdrawn) A transgenic plant comprising a nucleic acid molecule encoding a peptide comprising an amino acid sequence selected from the group consisting of:

(a) SEQ IDs: 17-26 and fragments thereof;

(b) amino acid sequences that differ from an amino acid sequence specified in (a) by one or more conservative amino acid substitutions; and

(c) amino acid sequences that share at least 50% sequence identity with an amino acid sequence specified in (a),

wherein the peptide has temporin biological activity.

11. (withdrawn) A transgenic plant according to claim 8 10 wherein the peptide further comprises an anionic pro-region peptide operably linked to the N-terminus of the peptide.

12. (currently amended) A transgenic plant comprising a recombinant nucleic acid molecule encoding a peptide comprising SEQ ID NO: 28~~an amino acid sequence selected from the group consisting of SEQ IDs: 28 and 34.~~

13. (withdrawn) A method of producing a biologically active cationic peptide comprising:

providing a transgenic plant according to claim 1; and
isolating at least one biologically active cationic peptide from the plant.

14. (currently amended) The method of claim 13, wherein the cationic peptide comprises SEQ ID NO: 3 ~~is selected from the group consisting of the dermaseptins set forth in SEQ ID NOS: 3-14.~~

15. (withdrawn) The method of claim 13, wherein the cationic peptide is selected from the group consisting of the temporins set forth in SEQ ID NOS: 17-26.

16. (new) The transgenic plant of claim 8, wherein the amino acid sequence shares at least 95% sequence identity to SEQ ID NO: 3.

17. (new) The transgenic plant of claim 4, wherein the nucleic acid molecule comprises SEQ ID NO: 27.

18. The transgenic plant of claim 3, wherein the dermaseptin peptide comprises SEQ ID NO: 28.

19. (new) The transgenic plant of claim 4 wherein the N terminal peptide extension comprises AMWK (SEQ ID NO: 39), ASRH (SEQ ID NO: 40), or ALWK (SEQ ID NO: 41).

20. (new) The transgenic plant of claim 4 wherein the N terminal peptide extension comprises MAMWK (amino acids 1-5 of SEQ ID NO: 28) or MASRH (amino acids 1-5 of SEQ ID NO: 33).